Bundy Bridge
Spanning the Yellowstone River
at Bundy Road
Pompey's Pillar Vicinity
Yellowstone County
Montana

HAER No. MT-102

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
Rocky Mountain System Support Office
National Park Service
P.O. Box 25287
Denver, Colorado 80225-0287

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HISTORIC AMERICAN ENGINEERING RECORD
BUNDY BRIDGE

I. INTRODUCTION

Location:	Spanning the Yellowstone River at Bundy Road Pompey's Pillar vicinity Yellowstone County, Montana.
Quad:	Nibbe, Montana
UTM:	12/731680/5097820
Date of Construction:	1915
Present Owner:	Montana Department of Transportation 2701 Prospect Avenue Helena, Montana
Present Use:	Highway Bridge
Significance:	The Bundy Bridge was the first riveted through truss constructed across the Yellowstone River in Montana. It was also significant because it opened the territory north of the Yellowstone River in the vicinity of Pompey's Pillar to ranching and homesteading by allowing access to the Northern Pacific Railroad station at Pompey Pillar. It was also one of the last of the bridge company-designed and constructed bridges built in Montana without the direct involvement of the Montana Highway Commission.
Historian:	Jon Axline, Montana Department of Transportation, June, 1998

II. HISTORY

Pompey's Pillar is located on an aboriginal travel corridor. The unique geological properties of the pillar were recognized by Native Americans, who painted pictographs and etched petroglyphs onto the sheer cliffs of the feature. Both William Clark and François Antoine Larocque noted pictographs on Pompey's Pillar in the early 19th century. One Crow legend reported that Pompey's Pillar was once attached to the sandstone bluffs on the north side of the Yellowstone River. At one point, however, the rock detached itself from the cliffs and rolled across the river to it present site. Geologically, Pompey's Pillar is composed of late Cretaceous sandstone that was formed 65 million years ago. The pillar is a detached monumental outcrop of sandstone that was separated from the sandstone bluffs on the north side of the Yellowstone River by riparian erosion.[1]

The Bundy Bridge area is included in the traditional aboriginal territory of the Crow Indians. The 1851 Fort Laramie Treaty established the project area as part of the Crow Indian Reservation. By 1868, however, continued Lakota, Northern Cheyenne and Arapaho depredations on the nearby Bozeman Trail, and pressure from southwestern Montana mining and ranching interests forced the federal government to call a gathering of the northern Great Plain tribes to Fort Laramie to end the fighting and re-establish the reservation boundaries set in 1851. Under the terms of the Fort Laramie Treaty of 1868, the Crow Reservation was significantly reduced in size and confined to the area south of the Yellowstone River with it bordered on the east by the Big Horn River. In 1882 and 1892, the reservation was reduced another three million acres, when tribal territory east and south of the Yellowstone River was ceded by the tribe in the face of mounting pressure from farmers and ranchers in the Yellowstone Valley, mining interests in the Beartooth Mountains near Yellowstone National Park and by the Northern Pacific Railroad. Finally, in August, 1899, the Crows agreed to cede 1,150,000 acres south of the Yellowstone River (including the Bundy Bridge site) for $1.15 million. The agreement also provided for the expansion of the Big Horn irrigation system, an increase in the annuity, and additional cattle and schools. Congress, however, did not ratify the agreement until 1904 after significant pressure from the Montana legislature and Senator Joseph Dixon. The ceded area was not opened to non-Indian settlement until 1911.[2]

The geological feature known as Pompey's Pillar was discovered by Canadian Northwest Company employee Francois Antoine Larocque in September, 1805. After learning of the Lewis and Clark Expedition in 1804, Larocque's superiors ordered him to meet the Corps of Discovery at the Mandan villages on the Missouri River near present-day Stanton, North Dakota. Although Larocque contacted Lewis and Clark ostensibly to provide aid to the expedition, in reality the purpose of the meeting was to acquire information about the Upper Missouri and Yellowstone river's fur resources. When the meeting with the Americans failed, the Factor at the Northwest Company fort north of the Assiniboine River in Manitoba, detailed Larocque and two others to contact the Crow Indians on the Yellowstone River. For the next five months, Larocque and his companions traveled with various Crow bands in southeastern Montana and northern Wyoming. On September 15, 1805, Larocque described a "whiteish perpendicular rock on which was sketched with red soil a battle between three people on horseback and three others on foot."[3]

In July, 1806, the Lewis and Clark Expedition split into three groups to explore as much of the Missouri and Yellowstone river drainages as possible before returning to St. Louis. A 12-man company under command of William Clark entered the Yellowstone Valley over Bozeman Pass on July 15, 1806. By July 25th, the group reached what Clark named "Pomp's Tower" in honor of their guide's, Sacajawea, infant son. Clark described the feature as a

> [R]emarkable rock situated in an extensive bottom of the Stard.Side of the river & 250 paces

> from it. this rock I ascended and from it's top had a most extensive view in every direction. This rock which I shall call Pompy's Tower is 200 feet high and 400 paces in secumpherance [sic] and only excessable [sic] on one side which is from the N.E. the other parts of it being a perpendicular clift [sic] of lightish coloured gritty rock on the top there is a tolerable soil of about 5 or 6 feet thick covered with short grass

Clark carved his name and the date on the northeast of the rock on the sole path to the top of the landmark. Clark also noted the presence of stone cairns on top of the feature and that "The nativs [sic] have ingraved [sic] on the face of this rock. The figures of animals &c near where I marked my name . . ." In addition to naming the rock, Clark also designated creek emptying into the Yellowstone opposite the feature "Baptiest's Creek" also in honor of Sacajawea's son (the creek was renamed "Pompey's Pillar Creek" by 1900)[4]

While camped in the vicinity of Pompey's Pillar on the night of July 25, 1806, Clark noted the abundant wildlife around the camp. He was, however, bothered by the

> "[E]mence [sic] herds of buffalo about our [camp] as it is now [rutting] time with these animals[.] The bulls keep such a grunting nois [sic] which is very loud and disagreeable sound that we are compelled to scear [sic] them away before we can sleep[.] The men fire[d] several shot[s] at them and scear[ed][sic] them away.

Both the Larocque and Lewis and Clark expeditions opened the door to the exploitation of the region's fur-bearing resources - especially beaver. Even before the Corps of Discovery had returned to St. Louis, they met men making their way up the Missouri River to trap beaver. The mouth of the Big Horn River on the Yellowstone and the Pompey's Pillar areas became well-traveled by mountain men and traders over the next five decades [5]

In November, 1807 St. Louis entrepreneur Manuel Lisa established a trading post, Fort Ramon, 27 miles east of Pompey's Pillar at the mouth of the Big Horn River. Lisa was an agent for the Missouri Fur Company. He, along with Pierre and Auguste Chouteau, William Clark and Andrew Henry, formed the company to establish a fur trade network with the Crow Indians on the Yellowstone River. The company abandoned the post in 1811 because of deteriorating relations with the Crow Indians. Over the next seven decades, three other fur posts were located in the general vicinity of the Bundy Bridge. The last post, Fort Pease, was besieged by the Lakota and northern Cheyenne just prior to Custer's defeat on the Little Big Horn in June, 1876 [6]

Between 1853 and 1873, several military expeditions explored and mapped the Yellowstone valley in the vicinity of Pompey's Pillar in search of a route for a transcontinental railroad. In 1860, Lieutenant Henry Maynadier was detailed by Captain William Raynolds to map the Yellowstone River and its tributaries as part of an ambitious military expedition organized to determine the region's agricultural and mineralogical resources and the navigability of the Yellowstone for steamboat traffic. In July, 1860, Maynadier observed a solar eclipse from the summit of Pompey's Pillar and noted Indian pictographs on the feature.[7]

Thirteen years later, in 1873, another military expedition escorting a survey party investigating a route for the proposed second transcontinental railroad reached Pompey's Pillar. The expedition consisted of 26 civilian railroad surveyors several European "adventurers" and 1,531 soldiers and cavalrymen under the command of Lieutenant Colonel George Armstrong Custer. The detachment camped on the flats adjacent to Pompey's Pillar Creek where the north approach of the Bundy Bridge is now located (Site 24YL666). At about 8 o'clock in the morning of August 16th, nine Lakota and Cheyenne snipers

under cover of Pompey's Pillar began shooting at soldiers bathing in the Yellowstone River. In the ensuing panic as the men fled for cover, one soldier was wounded. The following day, the expedition broke camp and headed north into the Musselshell River country before returning to the Dakotas.[8]

Unlike the upper Missouri River, the Yellowstone River did not serve as a natural water route into the region. Although the river was rather wide and deep below the mouth of the Big Horn river, it became increasingly treacherous further upstream. Military planners saw steamboat travel on the Yellowstone as a way of subduing the local Native Americans, while entrepreneurs saw it as an opportunity to carry supplies into a region with significant economic potential. To that end, several attempts were made by both the military and some Gallatin County businessmen to determine the head of navigation on the river. In January, 1875, General Phil Sheridan authorized Commodore Sanford B. Coulson of the Coulson Packet Company to conduct an exploration up the Yellowstone to find the head of navigation on the river. On May 26, 1875, the steamboat *Josephine* under the command of Captain Grant Marsh began the journey upriver. The expedition included, along with the 37-man steamboat crew, several Smithsonian employees and 107 soldiers from Fort Abraham Lincoln in Dakota Territory.[9]

On June 3, 1875, the *Josephine* reached Pompey's Pillar and was moored to a rock along the river near the landmark. According to Marsh in 1909, he and his crew did not expect to reach that far upriver. The crew and escort spent a day exploring the rock, with many carving their initials on it as had William Clark sixty-nine years before. To cap off what had been, to many, an idyllic break from the ordeal of piloting a steamboat up a largely uncharted river, Captain Marsh raised the American flag from the top of Pompey's Pillar. The *Josephine*'s trek upriver resumed the following day on June 4.[10]

In May, 1878, a steamboat belonging to Bozeman physician Achilles Lamme and rancher Nelson Story's Yellowstone Transportation Company reached Pompey's Pillar while threading its way upriver. The steamboat *Yellowstone*, under the command of John Calhoun Bryson, carried sixty tons of freight destined for Bozeman in the Gallatin Valley. Pompey's Pillar proved to be the highest point on the river the vessel could reach and the cargo was unloaded there for pickup by the Bozeman cartel.[11]

By the late 1870s, the Yellowstone River valley had become a heavily traveled corridor for supplies destined for Fort Ellis in the Gallatin Valley and Fort Keogh at the mouth of the Tongue River. The Tongue River Road was established by traders and the military in 1877 on the north side of the Yellowstone River in the vicinity of the Bundy Bridge. Many entrepreneurs, including steamboat entrepreneur Commodore Coulson, were still sufficiently optimistic that the river would be opened for steamboat traffic. To that end, a group of Bozeman entrepreneurs established the port of Coulson near present day Billings in 1877. By 1880, the community consisted of only fifty people, but included a substantial hotel and commercial buildings. Although the residents of Coulson had great faith in their tiny community, the arrival of the Northern Pacific Railroad and establishment of the community of Billings on the railroad's main line two miles to the north spelled the end of Coulson. The population of Billings and the Yellowstone Valley boomed after the arrival of the railroad. In 1883, the Thirteenth Montana Territorial Legislature created Yellowstone County.[12]

In mid-1882, the Northern Pacific Railroad reached Pompey's Pillar and established a station to the south of the landmark on the Crow Reservation. In 1905, the railroad relocated the station to its existing site two miles east of Pompey's Pillar. That same year, the U.S. Reclamation Service platted a community at the confluence of Fly and Lost Boy creeks about 400 yards south of the Yellowstone River. The town of Pompey's Pillar thrived after the opening of the former Crow territory to non-Indian settlement in 1911 and the construction of the Bundy Bridge in 1915. Drought and depression, however, had a significant impact on Pompey's Pillar in the 1920s when the territory north of the

community was deserted by the hundreds of homesteaders who had settled there the previous decade. In 1931, the community was virtually destroyed by fire. The Northern Pacific Railroad's successor, the Burlington Northern, closed the Pompey's Pillar depot in 1973.[13]

Within days of the cession of the strip of Crow Reservation just south of the Yellowstone River in early 1904, Congress authorized a survey along the river in preparation for creating a federal irrigation district. The U.S. Government intended the Newlands Reclamation Act of 1902 as a way to make the semi-arid West "blossom like the rose" through reclamation and the construction of massive irrigation projects. The Huntley Irrigation Project, the first in Montana, was authorized by Secretary of the Interior E. A. Hitchcock in April, 1905. The project encompassed 35,000 acres along the Yellowstone River between Huntley and the community of Pompey's Pillar. It included a 34-mile-long main canal and approximately 265 miles of lateral ditches. Construction began on the project's main canal in 1905. The U.S. Reclamation Service divided the project into three districts. The area including the Bundy Bridge was part of Division 3 of the project. The extension of the main canal into the division began in 1914 and was completed the following year. The Huntley Project's main canal passes about 500 yards south of the Bundy Bridge. None of the land owners in the immediate vicinity of the bridge, however, were users of the Huntley Project water.[14]

The terms of the 1904 Crow Reservation cession stipulated that any member of the Crow tribe could stay in the area if he/she had claimed an allotment. Consequently, just prior to the cession in May, 1904, Edward K. and Margaret Macer moved to the area on the south side of the Yellowstone before it was removed from the reservation. Margaret's father, Henry Keiser, had been married to a Crow woman. Therefore, Margaret was a half-blood Crow, while her four children were quarter-bloods; each was entitled to an allotment. In 1910, the Macer household included Edward, Margaret and four children: Beatrice, George, Henry and James, Margaret's sister and three hired hands. In 1917, Edward left the allotment for the community of Pompey's Pillar and ownership of the land passed to his son, Henry. In June, 1923, James and George received substantial allotments adjoining Henry's property. In October, 1921, the Yellowstone County Commissioners made Bundy Road on the south side of the river a "public highway."[15]

On the north side of the Yellowstone River, cowboy-turned-rancher William C. "Billie" Blaine filed preemptive claims on 179 acres that included the north approaches of the Bundy Bridge site in April, 1914. He received the patent to the property in September, 1914. A The 1912 General Land Office map shows a road in the approximate location of the existing Montana Secondary 584 (Bundy Road). In March, 1915, the road was designated a "public highway" by the Yellowstone County Commissioners. Two months later, in May, 1915, the county acquired the right-of-way for the construction of the Bundy Bridge.[16]

The passage of the 1909 Enlarged Homestead Act and 1912 General Land Office survey of the area opened the area north of the Yellowstone River to homesteading. The increasing population there may have prompted the Yellowstone Board of County Commissioners to pass a resolution on September 26, 1914 to construct a "modern and secure bridge for highway purposes . . . across [the] Yellowstone River near the mouth of Pompey's Pillar Creek . . . ." Unlike other bridges built in the region during the second decade of the 20th century, the commissioners' decision to build this bridge was not motivated by the submittal of a petition. The Commission determined that the $45,000 cost of the bridge could be borne by the issuance of bonds as stipulated by a law passed by the Montana state legislature in 1913. Before the bonds could be advertised, however, the issue had to be approved by a majority of the Yellowstone County voters. Consequently, on November 3, 1914, the referendum appeared on the ballot during the general election. Yellowstone County residents supported the construction of the bridge and the advertising for 20-year bonds by a significant margin. Voters in the western and

extreme eastern parts of the county largely voted against the referendum, while those in Billings and the area immediately adjacent to the proposed bridge site voted overwhelmingly for its construction. Accordingly, the county commissioners authorized the advertising of bonds for the construction of the Bundy Bridge on November 28, 1914. The county commissioners awarded the bonds to the Merchants National Bank of Billings on December 28th.[17]

A little less than two months after the bonds were issued to the Merchants National Bank, the commissioners authorized Yellowstone County Clerk F. E. Williams to advertise for the bids to construct the Bundy Bridge. While the bids were due at the county courthouse by March 19, 1915, for reasons as yet unclear, the commissioners postponed the bid opening until March 20th. The county commissioners received nineteen bids for the bridge, including several that were submitted as a result of an advertisement placed in the *Engineering News* by the County Clerk. The commissioners disqualified four of the bids, however, because they were not completed to the county's specifications. Although not specified in the historical record, it appears that the county commissioners had adopted the formula for bid submissions developed by the Montana Highway Commission in 1913. The Levy Construction Company submitted the high bid at $47,492, while the Billings-based Security Bridge Company submitted the low - and successful - bid at $43,920. Consequently, the Yellowstone County Commissioners awarded the contract to the Security Bridge Company and ordered that work begin on the bridge within twenty days.[18]

Designed by civil engineer Ray M. Murray of Billings (who had offices in the same building as the Security Bridge Company), the bridge would be the first all-riveted steel Warren truss in Yellowstone County and the first of this type to cross the Yellowstone River in Montana. The *Billings Daily Tribune* described it as a

> three-span [structure] set on concrete pillars . . . constructed to support flooring. Temporary timber flooring will be laid owing to the fact that the funds on hand for construction of the [bridge] are not sufficient to permit acceptance of bids calling for concrete flooring.

The structural components for the bridge were supplied by the Illinois Steel Company of Youngstown, Ohio. The lumber for the structure's falsework and cofferdams was provided by the Pompey's Pillar Mercantile Company of nearby Pompey's Pillar and the Seeley Lumber Company of Billings and Hesper, Montana. The Security Bridge Company began construction of the Bundy Bridge on April 2, 1915.[19]

Several months before the county let the bridge to contract, county residents north of the bridge site petitioned the commissioners for a county road. On November 30, 1914, local farmer Frank O'Connor submitted a petition to the commissioners requesting the county construct a three-mile road "north of the Pompey's Pillar Bridge." Although the commissioners promised to review the proposed alignment in January, 1915, it was not until after construction began on the bridge that they visited the area. Meanwhile, however, the commission received a petition from other north-side residents to lengthen the proposed "O'Connor Road" by another six miles to connect with an existing trail. There is no record in the County Commissioners' Proceedings of the O'Connor route being established. However, volume 35 of the Montana Land Tract Books indicate that a public highway was designated by the county in May, 1915. This is confirmed by a request to the county from William C. Blaine to establish a county road on his property to connect with the "O'Connor Road already granted." The existing route of Bundy Road (Montana Secondary Highway 584) is on the alignment established by Yellowstone County in 1915.[20]

On December 7, 1915, the Yellowstone County Commissioners announced plans to formally open the Bundy Bridge to the public on December 16th. In a dispatch appearing in the *Billings Evening Journal-Tribune*, chairman Marc Sorensen stated that while the commissioners had been criticized recently for not building enough roads north of the Yellowstone River near Pompey's Pillar, the opening of the bridge represented a change in county policy. Further, he claimed

> The county commissioners have thought it desirable that the tax-payers visit the bridge at that time and see what they are getting for their money. This is absolutely the best bridge that ever was constructed on the Yellowstone river . . . .

The planned celebration included a family picnic "[p]rovided weather conditions permit" with a number of speeches made by the county commissioners, a representative of the Security Bridge Company, the county surveyor and a "stationary engineer." The commissioners planned to drive to the bridge site the morning of December 16th, make a few speeches and break a bottle of champagne "warship" style on the south portal of the bridge. It is not known if the bridge dedication occurred as planned. On January 7, 1916, however, the Security Bridge Company received its last payment for the construction of the Bundy Bridge.[21]

III. THE BRIDGE

A. DESCRIPTION

The Bundy Bridge is a three-span riveted Warren through truss structure with two plate girder approach spans. The structure rests on four reinforced concrete piers with fenders on the upstream sides. The bridge consists of three 190-foot steel truss spans with a 37-foot plate girder approach span on the south (Approach Span No. 1) and a 37-foot plate girder approach span on the north (Approach Span No. 2). The structure is supported on the ends by reinforced concrete abutments. The bridge has an overall length of 650-feet with a deck width of 15'5" and an out-to-out width of 16-feet. The steel truss spans provide a vertical clearance of 14-feet from low steel to maximum high water. The bridge has a 15'2" vertical clearance on the deck.

Substructure

There are two reinforced concrete abutments and four reinforced concrete piers. The abutments are numbered 1 (south) and 2 (north). The piers are numbered 1 through 4 beginning on the south side of the Yellowstone River. Detailed plans of the piers do not exist at either the Yellowstone County Road Department or at the Montana Department of Transportation. Consequently, complete measurements for the piers are not available for this report. Because the piers are not of historic-age and were constructed in the early 1960s, there exact measurements were not considered necessary for this report.

Both Abutments 1 and 2 consist of 20'6" reinforced concrete faces each with two 17'4" reinforced concrete wingwalls. Two 18" x 24" concrete columns on the abutments' faces support the rocker bearings on the plate girder approach spans. The abutments are 17' 3" deep and rests on timber pilings.

Piers Nos. 1 and 4 are of the same dimensions and appearance. They consist of tapered reinforced concrete columns connected by a concrete diaphragm. The rocker bearings rest on the pier caps. Pier No. 1 is 25'2" in length with the cylindrical piers 5'4" in diameter. Pier No. 4 is 25'2" in length with the

cylindrical piers 5'4" in diameter. The piers rest on wood pilings. Both existing piers replaced the original reinforced concrete piers in the early 1960s; evidence suggests the original piers were similar in design to the existing features.

Piers 2 and 3 are also tapered reinforced concrete columns connected by concrete diaphragms. The rocker bearings rest on top of the columns. These two piers are original, but have had reinforced concrete fenders added to the them in the early 1960s when the bridge underwent a significant rehabilitation by Yellowstone County.

Superstructure
The Bundy Bridge is a steel riveted Warren through truss. It consists of three 190-foot main spans of ten panels each and two steel plate girder approach spans. The bridge is 650-feet long and 16-feet wide. Each panel is 19-feet wide and are a maximum of 26'11" deep. There are two steel rocker bearings at each span break at the piers. The superstructure of the steel spans of the bridge are comprised as follows: the main spans are riveted tnisses comprised of an unusual assortment of members. The lower chord is four angle sections with batten plates. Verticals are mid-panel are two angle sections with batten plates while the verticals between the panels are four laced angle sections. There are four varieties of diagonal members: the short diagonals at the hip are two laced angle sections; the diagonals of the end panels are four angle sections with batten plates; diagonals parallel with their closest inclined end pot are box beams comprised of four angle sections riveted with lacing bars aloug all four sides; the remaining diagonals are box beams comprised of two channel sections riveted with batten plates. The top chord is a continuous plate riveted atop two channel sections with lacing bars riveted to their lower flanges. Sway bracing consists of "lattice"-type angle section panels that are riveted, along with the angle section top stnits, to the verticals and top chords by batten plates. The portal also bracing consists of "latticed" angle sections riveted to the upper chords and verticals. Nine lines of 12" x 6" steel I-beam stringers are bolted to the top flange of the I-beam floor beams which are riveted to the superstructure; the stringers are spaced 2-feet apart. There are eleven 17" x 10" steel I-beam floor beams on each span with their position dictated by the panel points. The deck is composed of treated timber 2" x 4"s placed on edge and overlain with asphalt. The deck of the bridge is flanked by lattice-type steel guardrails. The bottom lateral bracing consists of angle sections.

The approach spans are riveted plate girders. Approach Span No. 1 (south) is 37-feet long and 16-feet wide. The approach spans both have three-panel plate girders with angle iron web stiffeners riveted to the sides, tops, and bottoms of the plates. The plate girders are 4'3" deep and the floor beams are 18" deep. All approach span ends have steel rocker bearings. The south end of the approach span rests on a reinforced concrete abutment, while the north end rests on Pier No. 1. The deck is supported by six lines of 9" x 13¼ steel I-beam stringers with timber 2" x 4"s placed on edge with an asphalt overlay. Approach Span No. 2 (north) is 37-feet long and 16-feet wide. The north end of the span rests on the north reinforced concrete abutment, while the south end rests on Pier No. 4. Like Approach Span No. 1, the deck is supported by six lines of 9" x 13¼" steel I-beam stringers; the deck is composed of timber 2" x 4"s placed on edge with an asphalt overlay. The decks of both approach spans are flanked by steel latticc-type guardrails mounted on angle section posts.

Material
It is not known the amount of material used in the construction of the Bundy Bridge.

Warren Trusses
Unlike most bridge trusses of thc 19th century, the Warren truss was not developed in the United States. The truss was developed in Great Britain in 1848 by Captain James Warren and Theobald Willoughby Monzani from a design originated by a Belgian engineer named Neville in 1846. United

States bridge engineer Squire Whipple also developed a "Warren" truss independently of the European designers in 1849. The truss is easily distinguishable from it contemporaries by the "W" configuration of the diagonal members. Like the Pratt truss, however, the Warren truss was frequently modified by engineers to accommodate traffic and site requirements. The first Warren truss constructed in the United States was built in Newark, New Jersey in 1851. The simplicity and economy of design of the truss should have made it appealing to the American railroad developers in the late 19th century. Instead, the railroad companies favored the more complicated and expensive Pratt and Howe trusses. By the early 1890s, a modification of the original Warren design began appearing more frequently on the nation's railroad network. By 1925, the Warren truss became the standard steel bridge utilized by the railroads and state highway departments.[22]

In Montana, the first known Warren through truss was constructed about 1895 by an, as yet, unknown contractor across the Big Hole River (24MA413) near Glen in Madison County. This rare pin-connected Warren truss is 90-feet long and is located on a road that once connected Dillon, a railroad station and county seat of Beaverhead County with the fertile Ruby River valley of southwestern Montana. By 1916, the Montana Highway Commission had developed a standard Warren through truss bridge design that was readily adopted by the counties of the state. The Bundy Bridge is a rare example of a bridge construction company-built Warren through truss structure. By 1928, the number of Warren trusses surpassed the number of pin-connected Pratt through trusses as the standard bridge on Montana's highways. Between 1916 and 1947, sixty-one of the Warren through and pony truss bridges were constructed under the auspices of the Montana Highway Commission. The last Warren through truss constructed in the state was built in 1947 and crosses the Little Powder River in Powder River County.

By April, 1998 there were approximately154 Warren trusses remaining on the state's on- and off-system roads built between 1895 and 1947. Of those, 106 are pony trusses and 48 are through truss structures.

B. MODIFICATIONS

There have been several modifications to the structure since its construction in 1915. The north and south abutments were replaced in the early 1960s with a reinforced concrete abutment of similar dimensions. The original plans for the decking of the structure called for cottonwood deck planks. They were replaced by the existing timber 2" x 4"s by Yellowstone County sometime after 1979. The appearance of the structure has been altered somewhat by the installation of concrete "Jersey" rails on both approaches to the bridge in 1995. The fenders on Piers Nos. 2 and 3 were constructed as part of the early 1960s rehabilitation project that essentially replaced the original substructure of the bridge.

C. OWNERSHIP AND FUTURE

The Bundy Bridge is currently owned and maintained by the Montana Department of Transportation. The department programmed the bridge for replacement in 1999 and a Memorandum of Agreement (MOA) was signed in September, 1997. The Bundy Bridge was offered for adoption in April, 1998. The bridge may be adopted by Yellowstone County, which would then lease the structure to the Pompey's Pillar Historical Association. A National Historic Landmark administered by the Bureau of Land Management, Pompey's Pillar is located about 100 yards from the Bundy Bridge. If the plan fails to materialize, then the Bundy Bridge will be demolished in 1999 or 2000.

IV. BIOGRAPHICAL MATERIAL

The Security Bridge Company
Founded by William S. Hewett and Arthur L. Hewett in 1905, the Security Bridge Company was one of over thirty bridge construction firms active in Montana during the first three decades of the twentieth century. Both William and Arthur Hewett learned the bridge business from their Great-uncle, Seth Hewett, in Minneapolis beginning in 1887. The S.M. Hewett Company constructed at least one bridge in Montana in 1893. Arthur worked primarily as a foreman for his uncle on Montana bridge projects beginning in 1892. By 1897, William had struck out on his own and formed the W.S. Hewett Bridge Company in Minneapolis. The company built bridges in Minnesota, the Dakotas and at least eight bridges in Montana between 1897 and 1906. The company, however, was not limited to the construction of bridges. Hewett also experimented with reinforced concrete and invented a pre-cast concrete culvert that could be assembled in sections.[23]

Hewett and his cousin, Arthur, formed the Security Bridge Company in 1905 with headquarters in Minneapolis. The new company's first project was the construction of a single-span pin-connected Pratt through truss across the Stillwater River at Kern's Crossing (24ST215) in Stillwater County in 1907. By 1917, the company had constructed at least 44 truss bridges throughout central and eastern Montana. Most were simple pin-connected Pratt through structures or riveted Warren pony truss structures. In 1911, the company relocated its headquarters to Billings, Montana and reincorporated with Arthur as president of the firm and fellow Minnesotan William P. Roscoe as vice-president. The company also opened a branch office in Lewiston, Idaho. The company's Billings corporate office was located in the Stapleton Building on North 32nd Street in Billings. The Security Bridge Company also built waterworks, sewers, concrete irrigation ditch structures and other heavy construction work in Montana, Wyoming, Idaho, Oregon and Washington.[24]

From 1911 until 1926, Arthur was president of the company. Even though the creation of the Montana Highway Commission's Bridge Department in 1915 ended the primary role of the bridge companies in bridge construction in Montana, the Security Bridge Company continued to build bridges under the auspices of the Commission and the counties. It was one of the few bridge construction companies in Montana to survive the redirection the bridge-building industry took in the state after the creation of the Montana Highway Commission in 1913. Arthur closed the company in 1926 to pursue other interests in Billings. The company's successor, the William P. Roscoe Company, continued to build bridges in the state until his death in 1956.[25]

V. FOOTNOTES

1.W.H. Banfill, "Pompey's Pillar," *Billings Times,* (October 25, 1928); David Alt and Donald Hyndman, *Roadside Geology of Montana* (Missoula: Mountain Press Publishing Company, 1991), 377.

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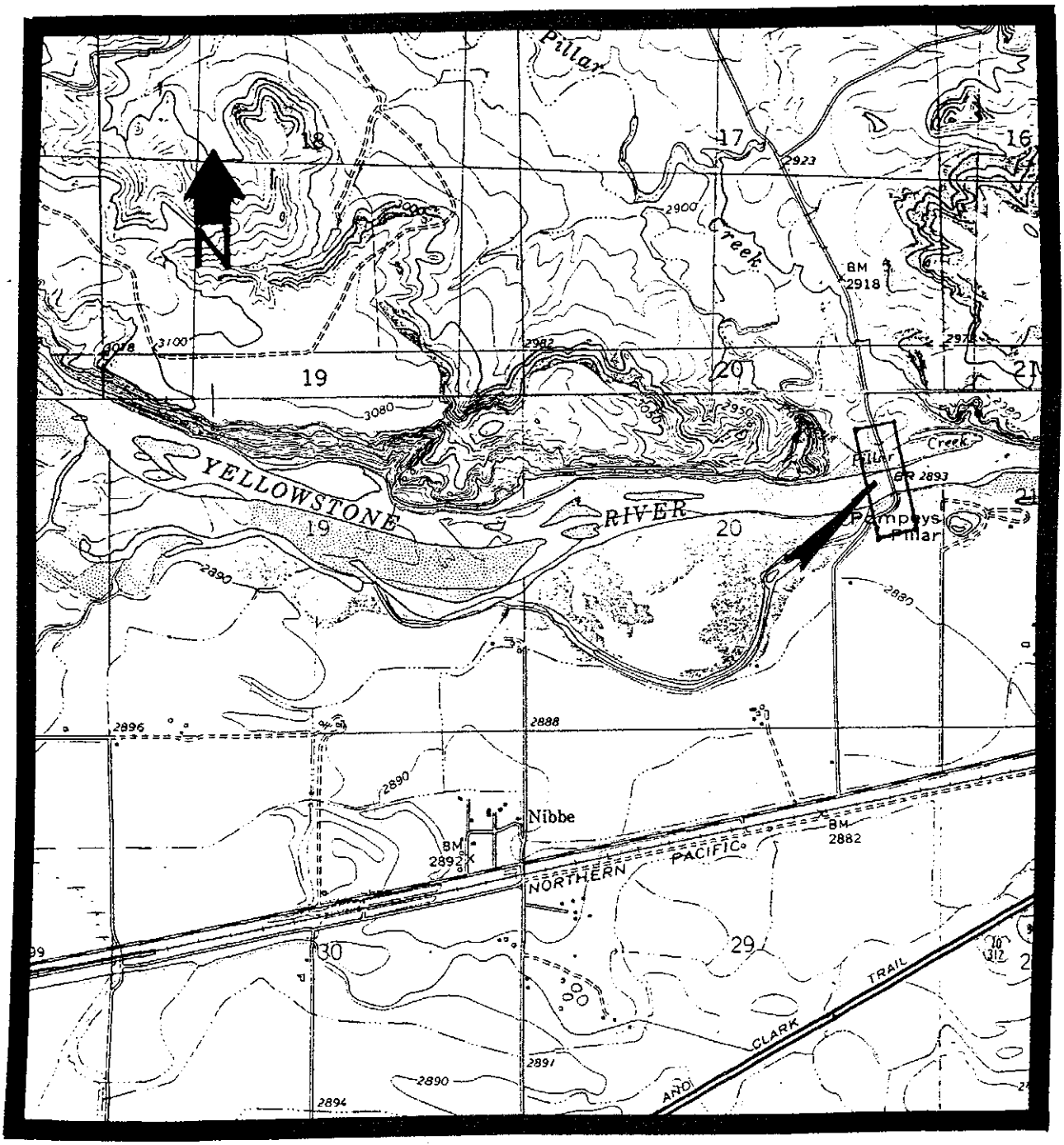

Map showing location of the Bundy Bridge (HAER No. MT-102) in Yellowstone County, Montana (PK Ranch SE [1980] and Nibbe [1967] USGS Quadrangle maps - 7.5 minute series).